



Forest Insect & Disease Management

Report No. 79-1-8
March 1979

EVALUATION OF SOUTHERN PINE BEETLE STATUS ON THE CHICKAMAUGA
AND CHATTANOOGA NATIONAL MILITARY PARK

GEORGIA
1979



SOUTHEASTERN AREA, STATE & PRIVATE FORESTRY
USDA FOREST SERVICE, ATLANTA, GA 30309

COVER PHOTOGRAPH

Lateral grooves in the outer bark indicates successful woodpecker predation of developing southern pine beetle brood.

EVALUATION OF SOUTHERN PINE BEETLE STATUS ON THE CHICKAMAUGA AND CHATTANOOGA NATIONAL MILITARY PARK

By

John H. Ghent, Entomologist

ABSTRACT

An aerial survey of the Chickamauga and Chattanooga National Military Park detected nine multiple tree spots ranging in size from 2 to 40 trees. A ground check of a portion of these spots revealed mortality caused by both the southern pine beetle and by an unknown causal agent, possibly littleleaf disease, Phytophthora cinnamomi Rands. Presently the population of southern pine beetle is not severe enough to warrant a control project.

INTRODUCTION

The southern pine beetle, Dendroctonus frontalis Zimm., is a native forest pest that will attack all species of southern yellow pines. Loblolly, Pinus taeda L. and shortleaf pine, P. echinata Mill. are the species attacked on the Park.

Overwintering occurs in all life stages, but survival is greater in the later larval instars since they move into the outer bark which insulates the insect from low winter temperatures. Adults emerge in the spring and either vacate the spot in search of susceptible trees to begin new infestations or they will attack adjacent trees and continue to enlarge the existing spot. The southern pine beetle probably has five generations a year on the Park. If conditions are right, there is a great potential for a rapid population buildup and severe mortality.

Outbreaks appear at periodic intervals and are first initiated in stressed trees or stands. Stands with high basal area and overmature trees are particularly favored. Water deficits caused by drought or root disease add to a stands susceptibility. Most of the Park's pine stands are overmature and occur in dense stands (basal area in excess of 130 sq. ft.). The drought that occurred last summer further stressed the pines which resulted in renewed activity by the southern pine beetle.

METHODS

On February 2, 1979 an aerial survey of the Park detected 9 areas of suspected southern pine beetle activity.^{1/} A portion of the spots detected were examined on the ground to verify cause of mortality and determine the level of activity in the infested areas.

RESULTS

Activity on the Park is currently at an acceptable economic level. Of the seven multiple tree spots ground checked only three were caused by southern pine beetle. Two of these spots currently contain brood in the lower portion of the stem. All infested trees showed signs of heavy woodpecker predation. The pileated woodpecker, Dryocopus pileatus was observed actively feeding in two locations on the Park. Western studies have shown that woodpeckers consume 85 percent of overwinter mountain pine beetles in infested trees.

Historic summary of spot size information from aerial surveys-

	<u>7/76</u>	<u>4/77</u>	<u>6/77</u>	<u>9/77</u>	<u>78</u>	<u>2/79</u>
No. of Spots	35	30	25	13	No	6
Range of Spot Size	1-200	5-500	1-15	1-15	SPB	1-40
Average Spot Size	44	77	5	7	Activity	10

^{1/} Bassett, R. 1979. Aerial Detection Survey, Report No. 79-3-4.

The active spots are located in an area where they do not endanger public safety or threaten to spread onto adjacent privately-owned forest land. Three single tree spots were examined and found non-active. These are located along roads and should be removed for the public's safety.

Figure 1 shows the location and status of the spots examined.

RECOMMENDATIONS

1. Forest Insect and Disease Management should conduct aerial detection surveys over the Park to monitor beetle activity.
2. It is suggested that standing dead trees be removed in areas used by the public, such as along trails, roads, and historical sites, where falling trees and branches would present a hazard.

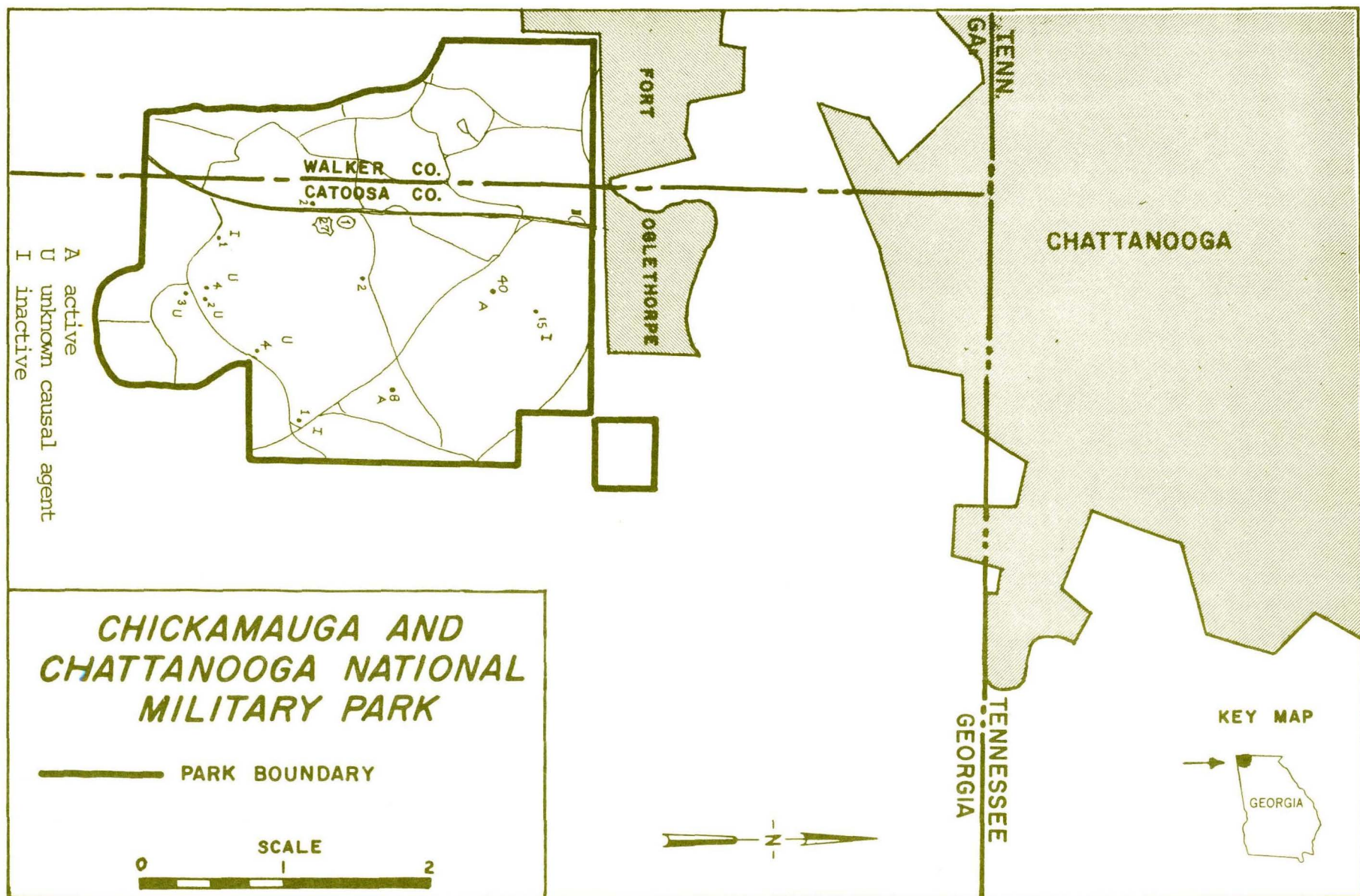


Figure 1 -- Location and status of SPB spots examined.